

**INDIANA DEPARTMENT OF TRANSPORTATION**

**INTER-DEPARTMENT COMMUNICATION  
Standards Section -- Room N642**

June 10, 1998

**DESIGN MEMORANDUM No. 98-02  
TECHNICAL ADVISORY**

**TO:** All Design, Operations and District Personnel, and Consultants

**FROM:** /s/ Richard VanCleave  
Richard VanCleave  
Design Policy Engineer  
Technical Services Division

**SUBJECT:** National Cooperative Highway Research Program (NCHRP) Report 350  
Guardrail, Bridge Railing Transition, and End Treatment Requirements

**EFFECTIVE:** September 10, 1998, Letting

The Federal Highway Administration is requiring that all guardrail and other roadside hazard protection devices be crashworthy in accordance with NCHRP 350. This is to take effect at the beginning of federal fiscal year 1999, on October 1, 1998. We have revised and added the appropriate standard documents so as to be in compliance with this FHWA requirement. The affected metric standard drawings are described on Page 4 Revised of Standard Drawing Memorandum 98-9 M. Affected recurring special provisions are included in the update set effective September 1, 1998. Design policy is not being affected by this memorandum.

1. REGULAR GUARDRAIL RUNS. Blockouts have been changed from steel to timber. This change does not affect the guardrail quantities required, the detailing required on the plans, or the pay item names or pay units. It does not genuinely affect the unit price of guardrail.

2. GUARDRAIL TO BRIDGE RAILING TRANSITIONS. For the guardrail transition type TGB, the post spacing has been shortened, and the posts and blockouts have been changed from timber to steel. The guardrail transition type WGB is unchanged. However, the WGB transition and WBC bridge railing transition may only be used where there is less than 7.6 m (25 ft) of guardrail required between a curved W-beam connector system and the beginning of the transition. The 601-TWGB and 706-BRTW standard drawings series must both be called for in the contract-specific standard drawings index for this situation.. This change does not affect the guardrail transition quantities required, the detailing required on the plans, or the pay item names or pay units.

The standard details for the 840 mm (2'-9") common height concrete bridge railing transition have been revised to add more reinforcement in the concrete. Details for the 1170 mm (3'-10") truck height concrete bridge railing transition have been standardized. The designations have been changed as shown on the standard drawings. The pay units are unchanged, however, the pay item names have been changed as follows:

Concrete bridge railing transition TGB becomes TBC, and its pay item number is 706-05732.

Concrete bridge railing transition WGB becomes WBC, and its pay item number is 706-05733.

Concrete bridge railing transition TBT is new pay item 706-05734.

Concrete bridge railing transition WBT is new pay item 706-05735.

Guardrail transition TGB must be used with concrete bridge railing transition TBC or TBT. Guardrail transition WGB must be used with concrete bridge railing transition WBC or WBT.

3. GUARDRAIL END TREATMENTS. The only INDOT standard end treatment which is in accordance with NCHRP 350, is the Combination Attenuating Terminal, which therefore must be used on the National Highway System. The appropriate recurring special provisions have been revised to reflect this. Other end treatments which are now in accordance with NCHRP 350 may be considered for standardization in the near future.

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Memorandum developed by Anthony L. Uremovich, Standards Engineer, Technical Services Division.

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